Comparing the nutritional value between raw pasteurized eggs and raw unpasteurized fresh eggs, the key takeaway is that their **inherent nutritional composition is virtually identical**. The pasteurization process is designed to enhance safety, not to alter the egg's core nutritional content.

Similarities in Nutritional Value (when consumed raw):

- **Comprehensive Nutrient Profile:** Both raw pasteurized and raw unpasteurized eggs are **highly nutritious**. They are excellent sources of **high-quality protein**, healthy fats, and a wide array of vitamins and minerals.
- **Key Vitamins and Minerals:** These include vitamins such as A, D, E, K, B1, B2, B6, B12, folic acid, biotin, and pantothenic acid. They also provide essential minerals like potassium, calcium, phosphorus, magnesium, iron, zinc, iodine, and selenium.
- **Antioxidants and Other Nutrients:** Raw eggs are rich in eye-protecting antioxidants like lutein and zeaxanthin, and an essential nutrient called choline, which supports brain and potentially heart function.
- **Protein Content Unchanged by Pasteurization:** Research indicates that the **in-shell pasteurization process has no significant effect on the protein quality of egg albumen**. Studies found **no significant differences in total or soluble protein content, in vitro digestibility, free amino acids, or discriminant-computed protein efficiency ratio (DC-PER) between pasteurized and unpasteurized egg albumen**. This means the amount of protein and its quality in the egg white remains the same after pasteurization. While a large raw egg typically contains around 6 grams of protein, this amount does not significantly change due to pasteurization.

Differences in Nutritional Value (primarily related to absorption when consumed raw):

- **Protein Bioavailability (Raw vs. Cooked Effect):** While pasteurization itself doesn't change the *amount* of protein, consuming *any* raw egg (whether pasteurized or unpasteurized) may lead to **lower protein absorption** compared to cooked eggs. Studies have shown that approximately **90-95% of protein from cooked eggs is absorbed**, whereas **only 50-65% of protein from raw eggs is absorbed**. This is because cooking alters the protein structure, making it easier for the body to digest. This reduced absorption applies to both raw pasteurized and raw unpasteurized eggs.
- **Biotin Absorption (Raw vs. Cooked Effect):** Raw egg whites contain a protein called avidin, which can bind to biotin (Vitamin B7) in the small intestine, thus **hindering its absorption**. Heat destroys avidin, making biotin more available in cooked eggs. While this is a concern with raw egg consumption in general, it's unlikely to cause a biotin deficiency unless large quantities of raw eggs are consumed daily. This effect is also present in both raw pasteurized and raw unpasteurized eggs.

The Crucial Differentiating Factor: Safety

The primary benefit and **most significant difference** between raw pasteurized eggs and raw unpasteurized fresh eggs lies in their **safety profile**, particularly when intended for raw consumption.

- **Risk of *Salmonella* Contamination:** Unpasteurized fresh eggs carry a **risk of *Salmonella* bacterial contamination**, which can occur either inside the hen during egg formation or indirectly when the bacteria contaminates the outside of the shell and penetrates it. Consuming *Salmonella*-contaminated eggs can lead to food poisoning, with symptoms like stomach cramps, diarrhea, vomiting, and fever.
- **Pasteurization for Safety:** Pasteurization is a gentle heat treatment process that **destroys harmful bacteria like *Salmonella* without cooking the egg**. The U.S. Department of Agriculture (USDA) considers in-shell raw eggs safe to use if they are pasteurized. This significantly reduces the risk of foodborne illness associated with raw egg consumption.
- **Vulnerable Populations:** For individuals at higher risk of severe illness from *Salmonella*, such as young children, pregnant individuals, older adults, and those with compromised immune systems, **avoiding unpasteurized raw eggs is particularly important**. Pasteurized eggs provide a safer alternative for recipes calling for raw or lightly cooked eggs, such as homemade mayonnaise or Caesar dressing.

In essence, while the nutritional content of raw pasteurized and raw unpasteurized eggs is fundamentally the same, **pasteurized eggs offer a significantly reduced risk of bacterial contamination**, making them a safer choice for recipes that call for raw or undercooked eggs.